

### In the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1        1.    (Currently-Amended) A method for reducing noise in a  
2    sampled acoustic signal, comprising:

3        receiving a stream of sampled acoustic signals;  
4        digitizing each sampled acoustic signal thereby forming  
5    digital samples;

6        selecting a fixed number of digital samples;  
7        multiplying the digital samples by a windowing function;  
8        computing the fast Fourier transform of the selected windowed  
9    digital samples to yield transformed windowed signals;

10       selecting half of the transformed windowed signals;  
11       calculating a power estimate of the transformed windowed  
12    signals;

13       calculating a smoothed power estimate by smoothing the power  
14    estimate over time using the equation:

$$P^t(i) = (1-\alpha) P^{t-1}(i) + \alpha P(i)$$

18    where: P<sup>t</sup>(i) is the smoothed power estimate for a current time  
19    sample to be calculated for the i-th FFT point; P<sup>t-1</sup>(i) is the  
20    smoothed power estimate for an immediately prior time sample for  
21    the i-th FFT point; P(i) is the calculated power estimate of the  
22    transformed windowed signals for the i-th FFT point; and α is an  
23    experimentally chosen predetermined value called the smoothing  
24    factor;

25       calculating a noise estimate;  
26       calculating a gain function from the noise estimate and the  
27    smoothed power ~~estimate.~~ estimate;

28 calculating a transformed speech signal by multiplying the  
29 gain function with the transformed windowed signal;  
30 calculating an inversed fast Fourier transform of the  
31 transformed speech signal to yield a sampled speech signal; and  
32 adding the sampled speech signal to a portion of the speech  
33 signal of a previous frame.

1 2. (Original) The method of Claim 1, wherein the fixed  
2 number of samples is thirty-two.

1 3. (Original) The method of Claim 1, wherein the windowing  
2 function is a hanning window function.

1 9. (Currently Amended) A system for reducing noise in an  
2 acoustical signal comprising:  
3 a sampler for obtaining discrete samples of the acoustical  
4 signal;  
5 an analog to digital converter coupled to the sampler and  
6 operable to convert the analog discrete samples into a digitized  
7 sample;  
8 a noise suppression circuit coupled to the analog to digital  
9 converter and operable to:  
10 receive the ~~analog discrete~~ digitized samples;  
11 select a fixed number of digitized samples;  
12 multiply the digitized samples by a windowing function;  
13 compute the fast Fourier transform of the windowed  
14 digitized samples to yield transformed windowed signals;  
15 select half of the transformed windowed signals;  
16 calculate a power estimate of the transformed windowed  
17 signals;  
18 calculate a smoothed power estimate by smoothing the power  
19 estimate over time using the equation:

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$$P^t(i) = (1-\alpha) P^{t-1}(i) + \alpha P(i)$$

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23 where:  $P^t(i)$  is the smoothed power estimate for a current time  
24 sample to be calculated for the  $i$ -th FFT point;  $P^{t-1}(i)$  is the  
25 smoothed power estimate for an immediately prior time sample for  
26 the  $i$ -th FFT point;  $P(i)$  is the calculated power estimate of the  
27 transformed windowed signals for the  $i$ -th FFT point; and  $\alpha$  is an  
28 experimentally chosen predetermined value called the smoothing  
29 factor;

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calculate a noise estimate;

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calculate a gain function from the noise estimate and the

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smoothed power estimate. estimate;

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calculate a transformed speech signal by multiplying the

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gain function with the transformed windowed signal;

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calculate an inversed fast Fourier transform of the

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transformed speech signal to yield a sampled speech signal; and

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add the sampled speech signal to a portion of the speech

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signal of a previous frame.

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10. (Original) The system of Claim 9, wherein the fixed  
2 number of samples is thirty-two.

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11. (Original) The system of Claim 9, wherein the windowing  
2 function is a hanning window function.